traffic originating on other networks,[39] even where one carrier terminates more foreign[40] traffic than the other. In other words, equality in the total amount of traffic terminated by each carrier is neither necessary nor sufficient to conclude that the carriers' termination costs are equal. This is so due to the underlying nature of traffic termination costs, as explained below.

Under a reciprocal termination arrangement, each carrier must construct sufficient network capacity to carry the anticipated volume of terminating and originating traffic. Capacity costs for a terminating carrier are primarily a function of the traffic delivered to the carrier in its busy hour. Thus, capacity costs are determined by the amount of capacity necessary to carry the network's peak load.[41] Given these facts, termination costs for interconnecting carriers will be equal where the busy hour minutes of use for carrier A multiplied by carrier A's cost of terminating traffic equals carrier B's busy

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[39] Where total termination costs are equal, each carrier must recover the same costs from its customers whether the carrier pays for the termination services provided by other carriers or simply pays to terminate the traffic delivered to it.

[40] The word "foreign"is used herein to denote traffic originating on another network.

[41] Total costs also will depend on the cost per busy hour minute of use of terminating traffic.

hour minutes of use multiplied by carrier B's cost of terminating traffic.[42]

Therefore, termination costs for the two carriers may be equal where carrier A terminates more busy hour minutes of use than carrier B, but carrier B has proportionally higher costs for terminating traffic. In this case the two carriers would be required to pay each other the same amount for termination services, which results in zero net termination revenues. Given the numerous differences between LEC and CMRS networks,[43] it may be that the cost of an additional unit of capacity for each network also differs.

In addition, evidence collected by CTIA indicates that the busy hours for CMRS and LEC networks very likely are non-coincident.[44] Thus, because most CMRS (total) traffic is terminated on LEC networks, if the CMRS busy hour is also the hour in which CMRS systems deliver the most traffic to LECs, then it is entirely possible that traffic delivered to LECs by CMRS operators would peak outside the LEC busy hour. Similarly, evidence also suggests that LECs deliver the largest volume of

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[42] Unfortunately, direct information on the balance of traffic during busy hours is not available, and indirect calculations based on other traffic profile information cannot be made with confidence.

[43] In order to increase capacity, LECs must re-size switching capacity and trunking, while CMRS providers must re-size switching capacity, subdivide cells, and increase backhaul capacity.

[44] Economic Issues at 15.

traffic to CMRS operators during the CMRS busy hour.[45] This indicates that foreign traffic terminated by each carrier during their respective busy hours may be more nearly equal than the balance of total LEC-CMRS traffic.

Moreover, given the numerous technological, competitive, and other developments occurring almost daily within the CMRS marketplace, concerns regarding the extent of any traffic imbalance between CMRS providers and LECs may materially change in the near future.

2. Reciprocal Termination Compares Favorably With Recovering Termination Costs Using Usage Sensitive Rates.

Assuming that some of the costs of providing termination services are usage sensitive, a reciprocal termination arrangement will not necessarily send optimally efficient pricing signals; i.e., the structure of the cost paid by carrier A (termination of carrier B's traffic) may not match the structure of the cost paid by carrier B (termination of carrier A's traffic). Opponents of reciprocal termination argue that a price of zero inefficiently encourages additional use of the network without accounting for the additional cost of such usage, and that a usage sensitive structure would send efficient signals. As more fully discussed below, there is no reason to conclude that usage sensitive pricing approximates an efficient pricing structure more closely than reciprocal termination; indeed,

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[45] Id. at 14.

considering the impact of these compensation arrangements on dynamic as well as static efficiency,[46] and the practical impact of these compensation arrangements on the level of rates, reciprocal termination appears to be the best option.

a. Neither Reciprocal Termination Nor Usage Based Rates Should Be Preferred Solely on the Basis That Resulting Price Signals Are More Efficient.

Price signals are important because the quantity of a service demanded by consumers is strongly influenced by the price of the service. The demand for a service effectively determines the resources devoted to provision of a service and the amount of the service made available at any given time. Prices function most efficiently when the structure and level of prices accurately "signal" the underlying cost of providing the service. Therefore, assessing the efficiency of a cost structure requires an analysis of the extent to which the pricing of a service matches the manner in which the cost of providing the service is incurred.

Applying this analysis to termination costs, one finds that while some termination costs may vary with usage, not all costs will have a direct relationship with usage. Obviously, usage based charges will not optimally recover costs which do not vary directly with usage. Examples of this are facilities dedicated

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[46] Particular attention should be paid to the compensation arrangement's impact on the development of new services and on competition for established services.

to termination (the cost of dedicated capacity) and conversion costs necessary to allow mutual termination services (these are often one-time costs).[47]

Once these clearly non-usage based costs are eliminated, the costs of network facilities that terminating traffic shares with other traffic must be considered. However, even these costs may not accurately be characterized as uniformly usage-based. This is because usage sensitive costs of the shared network typically are capacity driven. In other words, because only additional traffic during the busy hour requires additional capacity (and therefore incurs a cost) costs are only sensitive to the level of usage during the busy hour, when each incremental minute of use may add to the amount of capacity required to terminate the busy hour load. Thus, busy hour traffic has some slight incremental cost associated with the pressure each additional minute of use places on the potential need for additional capacity, while non-busy hour traffic has practically no incremental cost.

Indeed, it is a simplification to refer to the busy hour of the network, or the cost of additional usage during the busy hour. Different facilities and components in the network will have different busy hours (e.g., residential versus business end offices) and the cost of adding capacity to the network will vary from one location to another. As a result, the cost imposed by

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[47] Note that reciprocal termination does not foreclose revenue-based recovery of dedicated costs.

traffic being terminated at a given time depends on where in the network the call is terminated and the routing of the call, since those factors will determine which facilities are used, whether it is the busy hour for those facilities, and the level of cost per additional busy hour minute of use.

Thus, one may not blithely conclude that usage sensitive pricing is an efficient way to recover termination costs, and that reciprocal termination will be an inefficient compensation arrangement for those costs. For example, consider a uniform charge per minute of use. In this case, the price that matches the cost structure described above would equal the incremental cost per busy hour minute of use for traffic in the busy hour, and would equal zero for non-busy hour traffic.[48] Therefore, a uniform price for all usage never sends the right price signal: The price is too high for usage outside the busy hour, which inefficiently discourages usage outside the busy hour, while the price is too low during the busy hour, which inefficiently encourages usage during that time period. Thus, uniform usage prices are not optimal for usage during or outside the busy hour, and would send inefficient price signals both within and without the busy hour.

On the other hand, reciprocal termination is equivalent to a price equal to zero for additional minutes of traffic. From the

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[48] The incremental cost of non-busy hour traffic is essentially zero because it provides no pressure for increased capacity.

above discussion we know that zero is the optimal and efficient price for terminating traffic outside the busy hour, while a price of zero in the busy hour sends an inefficient pricing signal by encouraging inefficient use of the network during that time period.

Given these facts, one may readily conclude that reciprocal termination would efficiently terminate all non-busy hour traffic, while uniform usage sensitive rates would not efficiently price termination for any traffic, but would be closer to the efficient price during the busy hour. Without detailed cost and demand information, neither pricing structure can be conclusively found more efficient.

This conclusion holds true for non-peak/peak usage sensitive rates as well. Non-peak usage sensitive rates likely will be lower than uniform usage sensitive rates, and therefore closer to an efficient rate, but still not as efficient as a zero (reciprocal termination) rate. Peak rate periods will undoubtedly include some time periods wherein additional traffic has no incremental cost,[49] and will therefore have a lower than optimal price for those periods where incremental costs occur. A non-peak/peak rate structure likely will be more efficient than uniform usage sensitive rates, but by no means necessarily more efficient than reciprocal termination.

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[49] Peak prices for such traffic will have a higher-than-optimal price.

Finally, one should note that developing theoretically optimal prices (prices that differ from hour to hour) will not be feasible in practice. Developing such rates and collecting charges based on such rates will be costly, and consumers likely will be confused by such a rate structure, thereby rendering it practically useless for the purpose of sending price signals. The Commission's assessment of the merits of competing compensation arrangements should not be colored by reference to a theoretically superior, but unachievable, price structure.

b. Reciprocal Termination Avoids Efficiency Distortions Associated With Inaccurate Rate Levels.

The efficiency of usage sensitive rates will also depend upon the level of the rates. The above discussion assumes that the incremental cost of terminating an additional minute of use during the busy hour was known. In fact, such cost information may not be available. If, in the absence of accurate cost information, rate levels are set too high or too low, additional inefficiency will be introduced.[50] Moreover, as discussed below, setting interconnection prices too high likely would inhibit competition and competitive entry. Reciprocal termination is not subject to this limitation; any revenue-based compensation plan is potentially subject to this limitation.

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[50] In particular, switched access charges overall carry a substantial level of contribution to common costs, overheads and implicit subsidies, in addition to cost recovery. Rates set at such levels, well above costs, are unlikely to send efficient pricing signals.

c. The Cost of Implementing Revenue-Based Compensation Arrangements Likely Exceeds Any Possible Benefit.

Appropriate price signals are not the only efficiency concern associated with selection of a compensation arrangement. Another concern is producing and selling at minimum cost. Sometimes, it is costly to gather sufficient information to price "perfectly," and it is necessary to tradeoff some degree of pricing efficiency against the cost of ascertaining the optimal price. The choice of compensation arrangements may impose just such a tradeoff.

Indeed, it is practically unquestionable that usage sensitive pricing will impose more implementation and maintenance costs than reciprocal termination. Examples include the cost of usage monitoring equipment, costs of information collection, costs of preparing invoices, and costs of collection and dispute resolution. Thus, the overall static efficiency of usage sensitive pricing would be superior to that of reciprocal termination only if the benefit of enhanced pricing signals outweighed the greater costs imposed by usage sensitive pricing. As noted above, neither reciprocal termination nor usage sensitive rates can be preferred on the basis of pricing efficiency. Thus, given that pricing efficiency is too close to call, the higher implementation and maintenance costs associated with a usage sensitive arrangement begin to tip the scale in favor of reciprocal termination.

Moreover, reciprocal termination is administratively simple for both regulators and regulated industries. Such an approach is desirable from a government-regulation perspective considering the National Performance Review objectives to cut unnecessary government red tape.[51] Administrative simplicity also enhances competition by reducing costly, extraneous government regulation. Usage sensitive pricing, on the other hand, requires stringent, ongoing regulatory oversight, thereby increasing costs for both regulators and industry participants.

d. Revenue-Based Compensation Arrangements May Result in Dynamic Efficiency Losses by Inhibiting the Development of Competition and Innovation.

Changes and improvements in the number and quality of services provided and in the extent and efficacy of competition are critical for long-term improvements in economic efficiency and consumer benefit from telecommunications. The choice of compensation arrangements can affect the development of competitive and innovative local services and the extent of competition between LECs and CMRS providers. Indeed, the asymmetric importance of the availability and cost of interconnection to CMRS providers and nascent local exchange competitors cannot be underestimated.

CMRS providers can only attract customers if they can offer termination to wireline networks. So long as CMRS providers have

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[51] See, infra Section III.

relatively fewer customers than their LEC counterparts, termination costs will be a substantial part of their cost structure. A high proportion of calls originating on CMRS networks will terminate on a LEC network, while most traffic originated on a LEC network will also terminate on a LEC network. As a result, interconnection costs will be a major component of total costs for CMRS providers, while interconnection costs will be a much smaller component of LEC costs.

Thus, entry and competition will be deterred if interconnection costs are increased because usage sensitive rates are set too high (due to error or lack of information). CMRS customers will pay too much for mobile service, and potential new entrants (such as PCS providers) may be deterred. Even more importantly, LECs will have incentive to set higher interconnection rates for CMRS providers perceived as competitors. High interconnection prices may not entirely eliminate the viability of CMRS service, but high interconnection prices could relegate CMRS to use as a complementary service to LEC wireline service, rather than a competitive substitute to LEC wireline service. By inflating a significant input cost of a potential competitor, LECs will be able to restrain effectively that source of competition.

Moreover, even if CMRS services are viewed by consumers as a substitute for LEC wireline services, competition between the two types of carriers will be distorted. Because the LEC provides

most of the termination services it requires, the LEC's retail price structure can reflect the fact that most terminations impose little or no cost to the network. CMRS providers require LEC termination services for a high proportion of their calls; therefore, retail rates necessarily will reflect termination costs.[52] If termination prices exceed the underlying cost of providing the service, CMRS retail rates will be inflated, and CMRS providers' ability to compete will be inhibited. Reciprocal termination is not subject to these limitations.

Competitive concerns are far from the only source of dynamic efficiency losses; such losses may also occur simply as a result of the time necessary to implement a termination compensation scheme. Delays in establishing interconnection costs can delay or stunt the development of competition by increasing uncertainty and risk, which will inhibit investment. Consumers suffer lost opportunity for new service and competition. In contrast, reciprocal termination can be implemented quickly and will eliminate any potential risk of delay associated with revenue-based compensation.

Finally, reciprocal termination preserves as well the flexibility so crucial within the mobile services market because

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[52] The structure of rates a carrier pays for interconnection become an input to that carrier's cost structure; the carrier's retail rates are in turn constrained by these input costs. Rates CMRS providers must pay for terminating traffic outside the busy hour will become a floor for retail rates, even if terminating that traffic does not impose a cost on the LEC.

its scope is limited to interconnection pricing issues. It governs the compensation relationship between the LEC and the CMRS provider. Importantly, reciprocal termination does not interfere with either the state's ability to regulate end-user rates (should that become warranted pursuant to Section 332(c)(3)(A)), nor with the LEC/end-user customer relationship.

Congress has charged the Commission to permit the competitive policies underlying Section 332 sufficient time to achieve fruition. To the extent that the interconnection policy should be modified, the Commission may revisit its decision.

C. Reciprocal Termination Obviates the Need for Arbitrary and Contentious Cost Allocation Procedures.

Even assuming the Commission could design a usage sensitive mutual compensation arrangement for call termination which provided benefits that outweighed its costs, the Commission would still be faced with a difficult question: what, if any, non-incremental common termination costs will each carrier be allowed to recover. The Commission's extended discussion of cost principles used to develop prices for interconnection highlights the shortcomings associated with available cost allocation methodologies.[53] Simply put, adopting a compensation arrangement other than reciprocal termination would unavoidably require allocating common costs based upon one's original predisposition.

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[53] Notice at ¶¶ 48-57.

As correctly noted by the Commission, where services are provided using shared facilities, setting prices at the services' long run incremental cost would fail to recover the total cost of the network.[54] Allocating such common costs is an inherently discretionary exercise; whether such allocations are "right" depends upon whether the resulting price structure creates incentives which serve public interest goals or "first principles" identified by the regulator. In other words, cost allocations are derivative of informed policy judgments. Thus, prices which recover total costs including allocations practically cannot fail to differ from competitive prices. Moreover, even if regulators were able to identify a theoretically "correct" price, the result would be the product of complex and extended deliberation and would become almost immediately obsolete as the competitive environment evolves.

Ramsey Pricing.

Each of the allocation schemes discussed by the Commission suffer from additional infirmities as well. For example, "inverse elasticity" or "Ramsey" prices[55] do not "contemplate a firm that has one monopoly service and competes with other firms

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[54] Notice at ¶ 48.

[55] Inverse elasticity prices result from allocating a higher percentage of shared costs and overheads to services which are less responsive than others to price changes. See Frank P. Ramsey, A Contribution to the Theory of Taxation, 37 Econ. J. 47 (1927).

in its other services."[56] The Telecommunications Act of 1996 notwithstanding, LECs still enjoy a virtual monopoly on local exchange services. Thus, while the inverse elasticity rule would require allocation of a large proportion of costs to local exchange service, the elasticity of demand for this service is likely understated due to the paucity of local exchange alternatives.

Moreover, implementation of Ramsey prices by regulators requires that the demand elasticities for various services be treated as a given; i.e., elasticity is determined exogenously. However, economists have argued that "regulators considerably influence the firm's demand elasticity by their decisions and policies that affect the firm's actual or potential competitors. . .[t]he firm's price elasticity of demand thus must be said to be endogenously determined by the regulatory process itself."[57]

Demand-based (Ramsey) prices will therefore reflect the local exchange monopoly and regulatory constraints, not the inclination or ability of consumers to purchase service or the entry and foregone investment costs of alternative suppliers.

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[56] Leonard Waverman, "Pricing Principles: How Should Postal Rates Be Set?" in Perspectives on Postal Rates, at 20 (Roger Sherman ed., AEI Press 1980).

[57] William J. Baumol & J. Gregory Sidak, Toward Competition in Local Telephony 40-41 (MIT Press & AEI Press 1994).

Proportional Allocation Method.

Allocating shared costs among all services based on an allocator[58] -- whether in proportion to LRIC costs or in proportion with measured usage -- is suspect on both policy and economic grounds. Such allocations may arbitrarily (even innocently) reduce demand for some services and inefficiently inhibit and/or induce competitive entry. Moreover, allocating common costs in proportion to the service's LRIC costs would give LECs the incentive intentionally to overstate the LRIC cost of inputs to competitive services and thereby purposefully inhibit or prevent competition. In addition, investment patterns by incumbent LECs could be unpredictably altered.

Efficient Component Pricing.

The Efficient Component Pricing Rule ("ECPR"),[59] which sets prices for essential input services equal to the input's incremental cost plus the supplier's opportunity cost, introduces a number of contentious issues. First, the ECPR would allow LECs to continue to reap their current profit levels, including any monopoly rents. As noted by the Commission,[60] in these circumstances, it is extremely doubtful that even efficient competitive entry would pressure prices to move towards their competitive level. Second, implementing the ECPR would require

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58 Notice at ¶ 52.

59 Notice at ¶ 53.

60 Notice at ¶ 53.

regulators to quantify a carrier's opportunity cost, which can involve subjective analysis and is subject to manipulation by the carrier involved. Third, and perhaps most importantly, the ECPR will only optimize competitive entry if certain conditions are present.[61] The first condition is that the incumbent's and the entrant's services must be perfect substitutes.[62] While wireline telephone service and CMRS telephone service are to some extent substitutes, they are by no means perfect substitutes. Given these substantial issues, the ECPR is far too problematic to constitute a realistic foundation for pricing interconnection.

Other Methods.

Finally, the Commission requests comment on the propriety of adopting an approach which allows an incumbent carrier to assign common and overhead costs in any manner it chooses, subject to the requirement that each individual service pay no more than its stand alone cost, or subject to the requirement that the revenues from each service recover its incremental costs.[63] Unfortunately, neither of these proposals would necessarily prevent incumbent carriers from arbitrarily inhibiting competitive entry. For example, if most costs are common, incumbents could require interconnecting carriers to shoulder an

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[61] Jean-Jacques Laffont & Jean Tirole, Access Pricing and Competition, 38 Eur. Econ. Rev. 1673, 1693-94 (1994). See also, Notice at ¶ 53.

[62] Jean-Jacques Laffont & Jean Tirole, supra, at 1693.

[63] Notice at ¶ 54.

extremely high cost burden without exceeding the stand alone cost and without pricing other incumbent services below incremental cost. The resulting rates would bear no relationship to the rates which would prevail in a competitive milieu, and competition could be substantially inhibited.

One final note: Underlying the extended cost and capacity questions is a perception, perpetuated by the LECs, that their networks cannot accommodate the traffic generated by today's mobile telephone services without adding network capacity. LECs claim it will be necessary to incur fixed (or long run incremental) costs when they carry and terminate CMRS traffic on their network, costs which can only be accommodated by increasing network capacity. This argument is contrary to repeated LEC statements in other proceedings, and appears to be simply without merit.

One of the most valuable resources existing within the United States today is our nationwide, ubiquitous, advanced telecommunications infrastructure. In furtherance of longstanding federal and state policy, our nation's telephone system is engineered to an extraordinarily high standard of quality and has an extremely high market penetration rate. This means that there is almost no call blockage within the nationwide telephone system, even at peak calling periods. In other words, Americans have the ability to call at anytime, anywhere in the United States and the call will go through on the first try.

Largely as a function of this excess capacity purposely engineered into the system, the telephone network is capable of rapidly providing and accommodating new services and technologies such as facsimile machines and Internet services and without any accompanying network stress or overload.

For these reasons, any additional costs incurred by incumbent LECs in their carriage of CMRS traffic are trivial. Simply put, in the debate surrounding the costs of LEC carriage and termination of CMRS traffic, additional LEC capacity is NOT an issue. In fact, and as a direct result of the high standards of quality maintained within the telephone network, LECs have no need to add more capacity to their system to accommodate the traffic generated by today's mobile telephone services.

In various regulatory proceedings, LECs, as it serves their interests, claim that continuing investment in increased capacity and improved quality is a given, in effect a pre-existing obligation.[64] For example, a common theme raised by LEC

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[64] See, e.g., New Jersey Bell Telephone Co. Video Dialtone Request, Order and Authorization, 9 FCC Rcd. 3677, 3678 (1994) ("NJB states that it is already committed under the 'Opportunity New Jersey' plan approved by the New Jersey Board of Regulatory Commissioners to accelerating deployment of advanced technologies to achieve full broadband capability by 2010.").

In its Opposition to Petitions to Deny, New Jersey Bell notes, "Through weeks of public and evidentiary hearings, the New Jersey Board [of Regulatory Commissioners] reviewed all aspects of New Jersey Bell's plan for accelerated deployment of advanced technologies, including the economic justification for the plan. This plan commits New Jersey Bell to accelerate the conversion of its network to achieve full broadband capability statewide by the (continued...)

commenters in favor of adopting video dialtone rules was the following: the telephone network is constantly evolving, and, as a result, LECs are obligated to continue investing in it as a matter of course to maintain quality.[65] For this reason, most costs associated with a network upgrade which has the effect of accommodating video dialtone services should be assigned instead to basic telephone services because LECs had to upgrade the network anyway.[66] And consider the price cap proceeding. There,

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[64](...continued)
year 2010, and the upgrade of the Dover System provides one of the initial steps in this direction." New Jersey Bell Telephone Co. Video Dialtone Request, W-P-C 6840, 13 (Feb. 4, 1993).

[65] Implementation of Video Dialtone Service Rules, Memorandum Opinion and Order on Reconsideration and Third Further Notice of Proposed Rulemaking, 10 FCC Rcd. 244, 322 (1994) ("[W]here integrated networks are proposed, much of the investment will be used in the provision of intrastate telephone services . . . .").

[66] In Pennsylvania, Chapter 30 of the Public Utility Code, requires accelerated deployment of a broadband network as part of any alternative regulation. 66 Pa. C. S. §§ 3001-3009. Likewise, the New Jersey Board of Public Utility Commissioners has approved an alternative regulation plan which requires Bell Atlantic-New Jersey to accelerate construction of an advanced broadband network. Dock. No. TO92030358, released May 6, 1993.

Numerous States have realized the importance of developing advanced networks. In recent legislation, they have memorialized the development of advanced networks as State goals. Utah stated, "it is the policy of the State to facilitate and promote the efficient development and deployment of an advanced telecommunications infrastructure." Utah Code Ann. § 8b-1.1(5) (1995). Texas stated, "it is a goal of the State to facilitate and promote the deployment of an advanced telecommunications infrastructure. ... The primary means of achieving this goal shall be through encouraging private investment. . . ." Tex Rev. Civ. Stat. Ann. art. 1446c-O, § 3.358(a) (1995). Maine declared, "a modern state-of-the-art telecommunications network is
(continued...)

the Commission relied on the LECs' pledges that network quality would not suffer in the transition from cost-of-service regulation to price-based, incentive regulation.[67] The United Telephone System Companies stated that increased market forces require LECs to provide efficient, modern service.

> Great pressure is extended by alternative access vendors that are courting IXCs and other customers. Further, individual customers are considering private networks which compete with LEC access. Finally, IXCs can and do construct their own facilities further into the local network as an alternative to LEC access.
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> These market forces, in conjunction with an unprecedented service monitoring plan, provide LECs

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[66](...continued)
essential for the economic health and utility of the state . . . . [I]t is the goal of the State that all Maine's businesses and citizens should have affordable access to an integrated telecommunication infrastructure capable of providing voice, data and image-based services." 35-A Me. Rev. Stat. Ann. tit. 7, § 7101(2) (1995).

[67] Policy and Rules Concerning Rates for Dominant Carriers, Second Report and Order, 5 FCC Rcd. 6786, 6827 (1990). The Commission, recognizing the concern that LECs would not invest the "savings" resulting from price cap regulation in the upgrade of their networks, stated that "under price caps the LECs will have increased incentive and opportunity to develop and introduce new services; to invest in new technology, like ISDN and SS7, that will promote cost savings and efficiencies; to innovate; and to upgrade their network infrastructure, since it is their primary asset and is critical to their financial stability." Id. To ensure that price cap regulation did not lead to degradation of service and diminished investment in network modernization, the Commission expanded its monitoring of service quality and infrastructure development. Id.

A Commission Report released in 1995 stated that it did not find any evidence indicating significant degradation of service quality or disincentive for investment in the nation's telecommunications network. Price Cap Performance Review for Local Exchange Carriers, First Report and Order, 10 FCC Rcd. 8961, 9121 (1995).

with increased incentives to provide high quality service. If LECs fail to provide high quality service, the market will punish them by providing additional alternative access opportunities.[68]

D. Reciprocal Termination is Appropriate Regardless of the Physical Point of Interconnection with the LEC Network.

The Commission tentatively concludes that reciprocal termination represents the best interim solution for traffic terminating at the LEC end office (or equivalent CMRS facilities),[69] and the Commission seeks comment on whether and how LECs should recover from CMRS providers the cost of tandem switching and common transport between tandem switches and end offices.[70]

The Commission's tentative conclusion limiting reciprocal termination to end office terminated traffic and its concern regarding the recovery of traffic-sensitive transport and tandem switching costs is not necessarily consistent with pricing services at their incremental cost. CTIA perceives little basis for differentiating between the incremental cost of terminating traffic at the tandem and the incremental cost of terminating

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[68] Reply comments of the United Telephone System Companies in CC Docket 89-313, at 13 (June 8, 1990). In addition NYNEX Telephone Companies cites the historical precedent for the RBOCs investment in the network -- a recognition by the Chairman of AT&T before divestiture that a commitment to modernizing the switching network is a necessity. Moreover, NYNEX stated its commitment to invest in and upgrade the network. Reply Comments of NYNEX Telephone Companies in CC Docket No. 87-313, at 30-31 (June 8, 1990).

[69] Notice at ¶ 62.

[70] Notice at ¶ 65.

traffic at multiple end offices. During non-busy hours, the incremental cost will be essentially zero, regardless of the point of interconnection; during busy hours, the incremental cost will be positive.[71] As described above, reciprocal termination (zero termination cost) properly reflects the incremental cost during the majority of each day when incremental costs essentially equal zero. Requiring usage sensitive costs for tandem interconnection will overprice such services and send inefficient pricing signals most of the time. Like usage sensitive interconnection rates in general, limiting the situs of interconnection eligible for reciprocal termination is not necessarily justified on the basis of economic efficiency.

Moreover, even assuming arguendo that the incremental cost of terminating traffic at the tandem is always greater than the incremental cost of terminating at the end office, sound policy supports mandating that reciprocal termination be available regardless of the point of interconnection.[72] First, conditioning reciprocal termination on end office termination will send price signals to the marketplace which encourage CMRS

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[71] LEC total costs are greater when the cost of tandem switches and common transport facilities are added to the cost of end offices and local loops. However, CMRS total costs similarly are greater when the cost of MTSO and transport facilities are added to the cost of cell sites.

[72] The 1996 legislation would favor this outcome as well considering interconnection is mandated at any "technically feasible point" within the LEC network. 47 U.S.C. § 251(c)(2)(B).

carriers to maximize rather than minimize costs, i.e. create incentives for CMRS providers to build unnecessary redundancy into their network. CMRS carriers will be required to establish a connection with each individual end office. This will significantly increase the cost to society (i.e., diminish consumer welfare) of terminating traffic on LEC networks.

Second, a reciprocal termination policy limited to end office only interconnection will also increase the cost burden on entering CMRS operators such as PCS licensees by encouraging redundant construction. This will inhibit the ability of nascent PCS operators to compete effectively.

Third, a policy which favors end office interconnection will discourage CMRS providers from providing ubiquitous service. In other words, it could create incentives to interconnect only at those end offices where high volumes of traffic regularly flow. Significantly, high cost and low income areas will be the primary victims.[73]

Finally, encouraging interconnection at any one point in the network implicates dynamic efficiency losses. For a regulator to send the correct price signal regarding the most efficient point of interconnection, it must be capable of ascertaining all relevant network architecture designs and discern the most efficient interconnection point within a given network. This

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[73] Thus, encouraging end office versus tandem interconnection could inhibit universal service as the CMRS network would not be fully integrated with the PSTN via the LEC.

necessarily assumes that the regulator has perfect knowledge of the range of network architectures available, and that it can correctly price the various interconnection points. Given the progressive and dynamic nature of CMRS, network design is an inherently amorphous concept. In effect, carriers will be encouraged to construct networks under a specific paradigm which may not be the most efficient or adaptable, and innovation in network design will be chilled, all due to pricing signals imposed by regulation.

It is important to consider as well that current interconnection arrangements are more a function of the prices charged by the LECs than of static engineering efficiency. Reciprocal termination, if available at any technically feasible point within the network, will provide an incentive to parties to seek the most efficient, lowest cost point of interconnection. Current interconnection arrangements need not be preserved or maintained in a reciprocal termination environment.

E. Many of the Major Policy Aspects of the 1996 Act, Including Those Underlying the Interconnection Provisions, Reflect a General Preference for a Reciprocal Termination Approach.

Many of the major policy aspects of the 1996 Act appear to favor a reciprocal termination approach.[74] The 1996 Act adds several sections regarding interconnection designed to supplement

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[74] As an initial matter, and as explained more fully below, nothing within the 1996 Act derails the Commission's authority under Section 332 to adopt reciprocal termination to govern the LEC-CMRS interconnection compensation relationship.